Business Consulting Services

The Nationwide Health Information Network (NHIN) Architecture Prototype Project

High Level Approach To Teaming and Architecture

January 18, 2006

NHIN Architecture Prototype : Key Facts

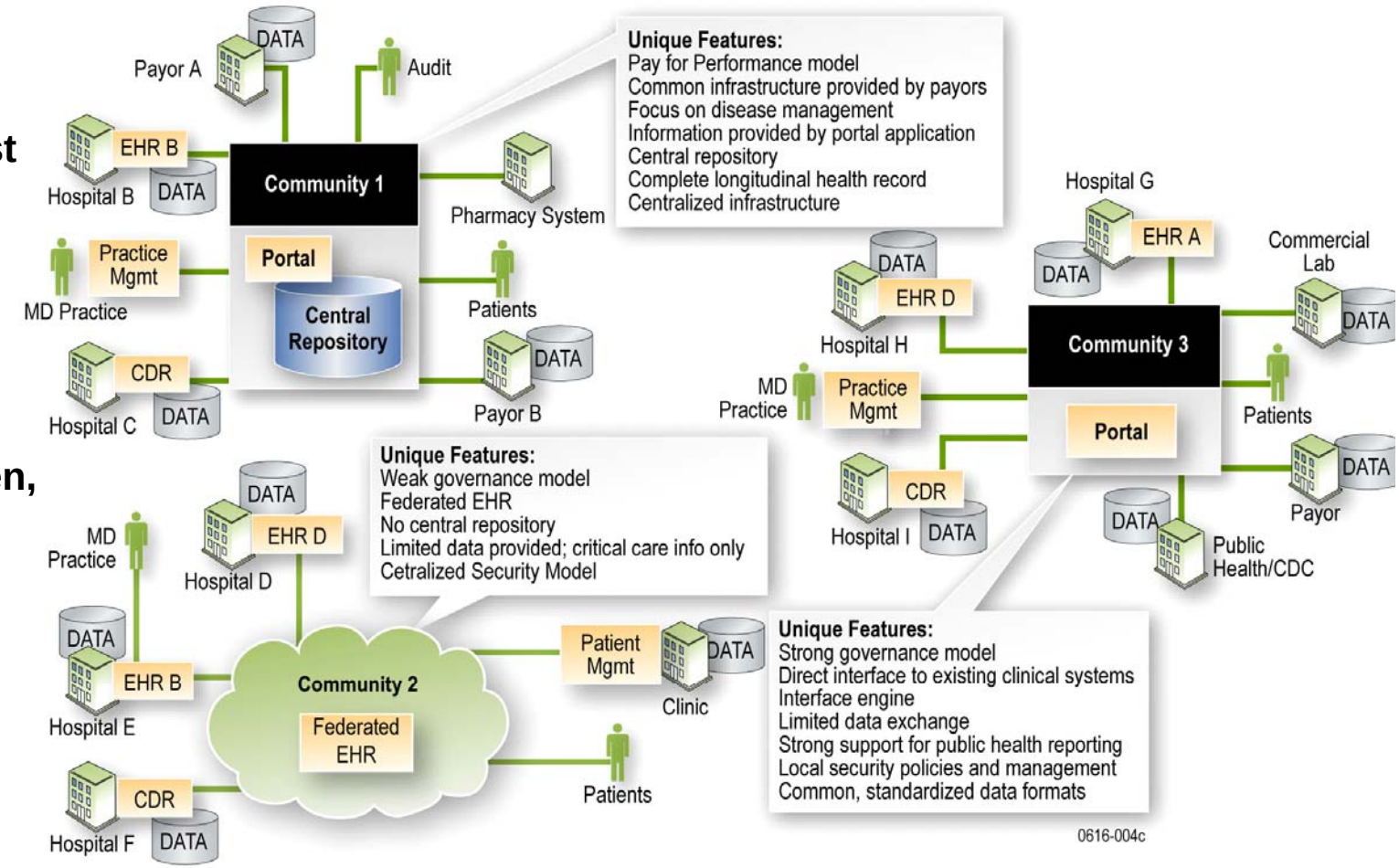
– IBM Team Composition

- **IBM internal staff, serving in Team Lead roles**
  - **Ginny Wagner, Project Executive**
  - **Casey Webster, Technical Lead**
  - **Richard Steen, Health Care Process Lead**
  - **Mary Raisor, Health Care Process Expertise**
  - **Jarret MacDonald, Health Care Process Analyst**
  - **Kevin Julier, Architectural Liaison with Other Parts of IBM & Outside Bodies**
- **Health Care Marketplace Communities**
  - **North Carolina Healthcare Information & Communications Alliance (NCHICA) - Research Triangle, NC**
  - **North Carolina Healthcare Information & Communications Alliance - Rockingham County, NC**
  - **Taconic Health Information Network and Community (THINC), - Taconic Region, NY**
- **Small Businesses:**
  - **Argosy - Business Innovation**
  - **HMS Technologies - IDL Solutions**
  - **Ingenium - VICCS**
- **Advisory Council**

A NHIN Architecture must be flexible enough to address the clinical information needs of diverse markets and secure enough to engender trust

A Nationwide Health Information Network must be …

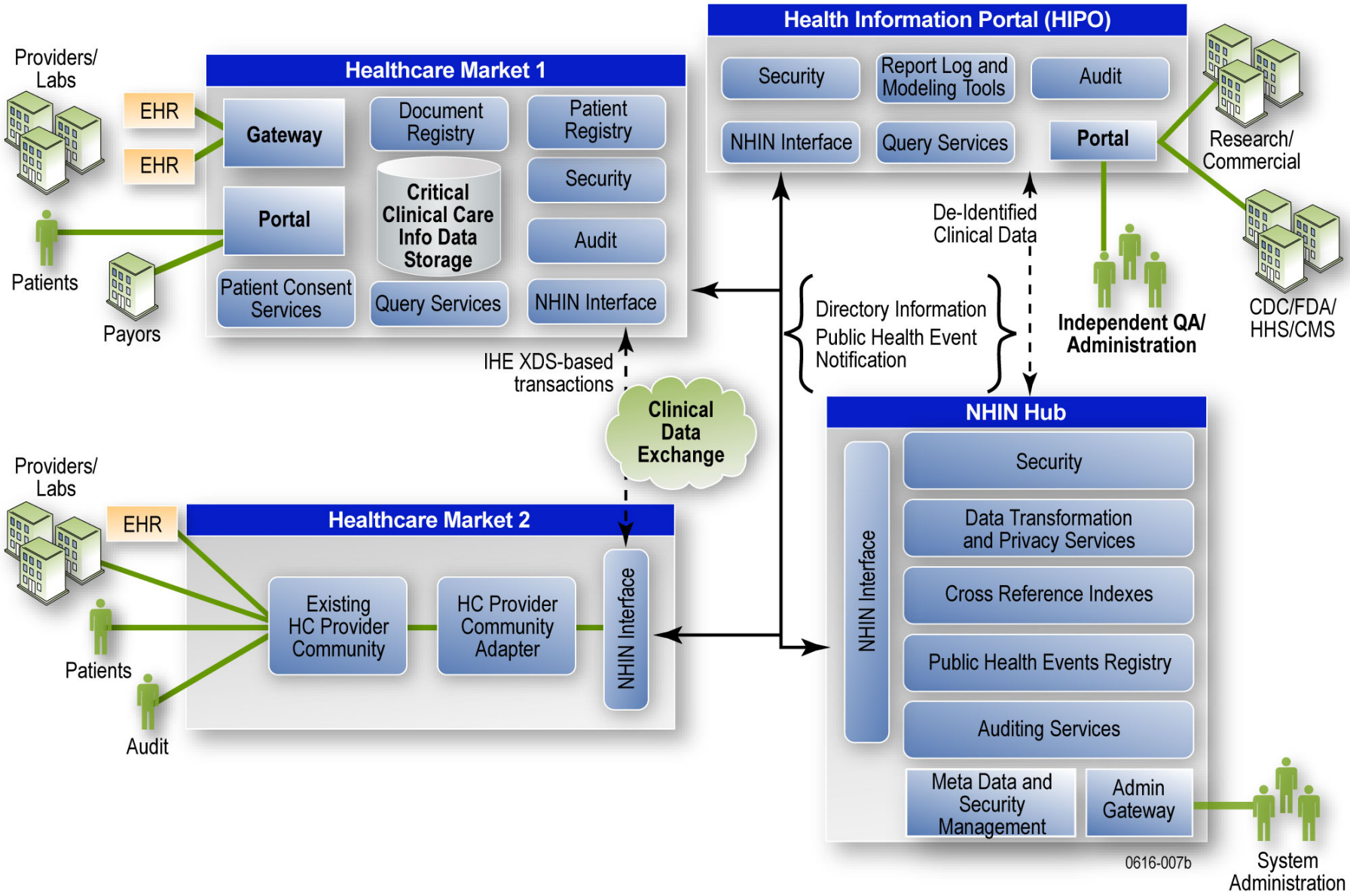
- **Private**
- **Secure**
- **Seamless**
- **Flexible, Open, Transparent**
- **Responsive**
- **Reliable**
- **Affordable**
- **Simple**
- **Scalable**



IBM's NHIN prototype will be based on industry standards and will provide the flexibility to connect both new and mature healthcare markets. Architectural considerations:

- **Federated Queries vs. Distributed**
  - Our Approach: Distributed (i.e., healthcare market-to-healthcare market) Queries
- **Protocols To Be Used for the Storage and Access of Clinical Data**
  - Our Approach: Design a model architecture for healthcare markets and interaction between healthcare markets that utilizes the Integrating the Healthcare Enterprise (IHE) Cross-Enterprise Document Sharing (XDS) profile.
- **The Physical Location of the Clinical Data**
  - Our Approach: Designate a "home" healthcare market for each patient, and locate all clinical documents for that patient there. A subset of health information, known as the "critical clinical information," will be kept in a single document repository within the healthcare market infrastructure so that it is readily available when needed while other, less critical information, will be maintained within the source systems and accessed when needed.
- **Modify Existing Healthcare Markets vs. Build an Adapter**
  - Our Approach: Build Standards-Based "Adapters" for existing healthcare markets that already have an information sharing capability within the community itself but would like to extend this capability to include participation within the NHIN ecosystem.
- **National Patient Registry vs. Federated Registry**
  - Our Approach: No national patient registry, but within each healthcare market utilize a patient registry/cross-reference service that is based upon the IHE PIX (Patient Identifier Cross Reference) profile. Also, create a national Public Health Events Registry to track specific events that are related to public health.
- **Data Security**
  - Our Approach: Personally identifiable information deserves the highest level of security protection. Encrypt data during message transfers; investigate the feasibility of encrypting data while at rest (in databases).

Conceptual Architecture for the NHIN Prototype



Major Project Phases

- **Inception Phase** begins the iterative process of requirements gathering and beginning of all of the supporting activities required in subsequent phases. (Now thru to the end of February .. Subject to change.)
- During the **Elaboration Phase** our team will refine and detail the use cases, business requirements and security and privacy policies developed during Inception Phase. (Early February thru to end of April .. Subject to change.)
- The primary focus of the **Construction Phase** is the detailed design, development, testing and integration of the system components that will be used to demonstrate and evaluate the NHIN prototype architecture. (Mid-March thru to the end of August .. Subject to change.)
- The primary purpose of the **Transition Phase** is to finalize the system and user documentation and to test and deploy the hardware and software that will be used to run the prototype demonstration during the Operate Phase. (End of August thru to Mid-October .. Subject to change.)
- The **Operate Phase** provides a thirty (30) elapsed day & live test of the three use cases within & across the three markets. (Mid-October thru Mid-November .. Subject to change.)